

§112

The limitations of claim 3 have been incorporated into claim 1 to overcome the rejection under 35 USC §112, second paragraph. The dependency of claim 4 has been amended accordingly.

§103(a)

Claims 1-6 and 10-11 were rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 6,149,949 to Coutts in view of U.S. Patent No. 4,764,471 to Ripka and Applicants' specification at pages 1 and 6-8.

Looking first at amended claim 1, it can be seen that the claimed method now requires that the pressure on the liquid side of the membrane be kept higher than the pressure on the gas side of the membrane. This limitation has a basis at page 7, lines 26-33 of the application. By keeping the pressure on the liquid side of the membrane higher, the gas does not pass through the membrane as bubbles. The reduced bubble formation greatly reduces or eliminates foam formation. (See page 7, lines 26-33.)

*See page 9
restricted
to certain
pore sizes*

Turning now to the Coutts and Ripka patents, there is nothing in either document that recognizes the foaming problem or that shows or suggests the control of the pressure ratio on the liquid and the gas side of a membrane in order to control the foaming problem. Thus, it is believed that the rejection under §103(a) is overcome.

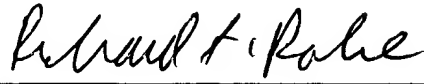
Conclusion

Accordingly, it is believed that the entire application has been placed in condition for allowance. Favorable reconsideration is respectfully requested. No additional fees

are believed to be needed for this amendment. However, if additional fees are needed, please charge them to Deposit Account No. 17-0055.

Respectfully submitted,

Dated: July 26, 2002

By: 
Richard T. Roche
Registration No. 38,599
Quarles and Brady LLP
411 East Wisconsin Ave.
Milwaukee, WI 53202
(414) 277-5805

5278788

Version with markings to show changes made

1. (Three Times Amended) A method of [oxygenating] fermenting a liquid medium with a yeast slurry from a previous fermentation, the method comprising the steps of:
 - (a) providing a yeast slurry from a previous fermentation having 40 g/l yeast to 80 g/l yeast on a dry weight basis, wherein the yeast experienced anaerobic conditions in the previous fermentation;
 - (b) [prior to pitching the yeast in a subsequent fermentation,] passing at least a portion of the yeast slurry through a membrane contactor, the contactor comprising at least one hydrophobic, microporous membrane, the membrane having a liquid side and a gas side, wherein the contactor is connected to an oxygen source, and wherein at least a portion of the yeast slurry is in proximity to the membrane on the liquid side;
 - (c) delivering oxygen from the oxygen source to the gas side of the membrane under conditions that cause at least a portion of the oxygen to transfer from the gas side of the membrane to the yeast slurry such that the k_La is at least 0.005 sec^{-1} [.] and such that the pressure on the liquid side of the membrane is kept higher than the pressure on the gas side of the membrane; and
 - (d) thereafter pitching a liquid medium with the yeast slurry.
4. (Amended) The method of claim [3] 1, wherein the medium is wort.